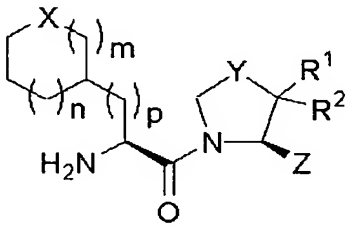
AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Original) An α-amino acid derivative of the formula (I)



(I)

wherein

R^1 is a hydrogen atom, a halogen atom, alkyl or alkoxy,

R^2 is a hydrogen atom, a halogen atom, a hydroxyl group, alkyl or alkoxy, or

R^1 and R^2 are joined to form oxo, hydroxyimino, alkoxyimino or alkylidene,

X is $CH\text{-}R^3$ or $N\text{-}R^4$,

Y is CR^5R^6

wherein R^5 and R^6 are each a hydrogen atom, a halogen atom, a hydroxyl group, alkyl or alkoxy, or R^5 and R^6 are optionally joined to form oxo, hydroxyimino, alkoxyimino or alkylidene,

S, S=O or SO_2,

Z is a hydrogen atom or cyano,

m and n are each 0, 1 or 2, wherein the sum of m and n is 1, 2 or 3,

p is 0, 1, 2 or 3,

R^3 is $-NR^7R^8$

wherein R^7 and R^8 are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl, or are optionally bonded to each other to form heterocycle having at least one nitrogen atom, and optionally having other further hetero atom(s),

wherein the heterocycle is optionally substituted or condensed with an aromatic ring optionally having substituent(s),

$-NR^9COR^{10}$

wherein R^9 and R^{10} are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, arylalkenyl, heteroaryl, heteroarylalkyl or heterocycle,

$-NR^{11}CONR^{12}R^{13}$

wherein R^{11}, R^{12} and R^{13} are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl, or R^{12} and R^{13} are optionally bonded to each other to form heterocycle having at least one nitrogen atom, and optionally having other further hetero atom(s),

wherein the heterocycle is optionally substituted or condensed with an aromatic ring optionally having substituent(s),

$-NR^{14}SO_2R^{15}$

wherein R^{14} and R^{15} are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl or heterocycle,

$-OR^{16}$ or $-OCOR^{17}$

wherein R^{16} and R^{17} are each a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl or heterocycle, and

R^4 is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl, heterocycle, $-COR^{18}$

wherein R^{18} is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, arylalkenyl, heteroaryl, heteroarylalkyl or heterocycle,

$-CONR^{19}R^{20}$

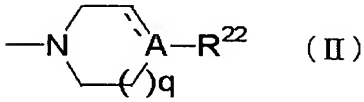
wherein R^{19} and R^{20} are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl, or R^{19} and R^{20} are optionally bonded to each other to form heterocycle having at least one nitrogen atom, and optionally having other further hetero atom(s),

wherein the heterocycle is optionally substituted or condensed with an aromatic ring optionally having substituent(s), or

$-SO_2R^{21}$

wherein R^{21} is alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl or heterocycle,

provided that when p is 0, then X is CH-R^3, and R^3 shows the formula (II)



(II)

wherein

⋯⋯ is a single bond or a double bond,

R^{22} is aryl or heteroaryl,

Q is 1 or 2, and

A is a carbon atom or a nitrogen atom,

provided that i) when A is a carbon atom, then A is optionally substituted by a hydroxyl group, carboxyl or alkoxycarbonyl, and ii) when A is a nitrogen atom, then

⋯⋯ is a single bond,

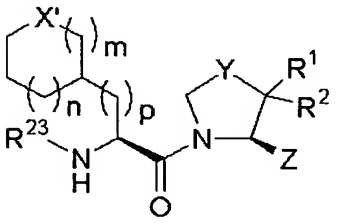
wherein, of the above-mentioned groups, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl and heterocycle optionally have substituent(s),
or a pharmaceutically acceptable salt thereof.

2. (Currently Amended) The α-amino acid derivative of claim 1, wherein~~, in the formula (I) of claim 1,~~ m = 2, n = 0 and X = CH-R^3~~, or a pharmaceutically acceptable salt thereof~~.

3. (Currently Amended) The α-amino acid derivative of claim 1, wherein~~, in the formula (I) of claim 1,~~ R^3 is the formula (II) ~~of claim 1, or a pharmaceutically acceptable salt thereof~~.

4. (Currently Amended) The α-amino acid derivative of claim 3, wherein~~, in the formula (I) of claim 1,~~ Y = S, ~~and~~ $R^1 = R^2 = Z$ = H, ~~and in the formula (II) of claim 1,~~ q = 1 and A = N~~, or a pharmaceutically acceptable salt thereof~~.

5. (Currently Amended) A compound of the formula (III)



(III)

wherein

X′ is CH-R^3, N-R^4 or C=O,

R^{23} is -COR^{24}

wherein R^{24} is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl or heterocycle, or

-$COOR^{25}$

wherein R^{25} is alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl or heterocycle, ~~and~~

~~other symbols are as defined in claim 1~~

R^1 is a hydrogen atom, a halogen atom, alkyl or alkoxy,

R^2 is a hydrogen atom, a halogen atom, a hydroxyl group, alkyl or alkoxy, or

R^1 and R^2 are joined to form oxo, hydroxyimino, alkoxyimino or alkylidene,

Y is CR^5R^6

wherein R^5 and R^6 are each a hydrogen atom, a halogen atom, a hydroxyl group, alkyl or alkoxy, or R^5 and R^6 are optionally joined to form oxo, hydroxyimino, alkoxyimino or alkylidene,

S, S=O or SO_2,

Z is a hydrogen atom or cyano,

m and n are each 0, 1 or 2, wherein the sum of m and n is 1, 2 or 3,

p is 0, 1, 2 or 3,

R^3 is -NR^7R^8

wherein R^7 and R^8 are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl, or are optionally bonded to each other to form heterocycle having at least one nitrogen atom, and optionally having other further hetero atom(s),

wherein the heterocycle is optionally substituted or condensed with an aromatic ring optionally having substituent(s),

$-NR^9COR^{10}$

wherein R^9 and R^{10} are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, arylalkenyl, heteroaryl, heteroarylalkyl or heterocycle,

$-NR^{11}CONR^{12}R^{13}$

wherein R^{11}, R^{12} and R^{13} are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl, or R^{12} and R^{13} are optionally bonded to each other to form heterocycle having at least one nitrogen atom, and optionally having other further hetero atom(s),

wherein the heterocycle is optionally substituted or condensed with an aromatic ring optionally having substituent(s),

$-NR^{14}SO_2R^{15}$

wherein R^{14} and R^{15} are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl or heterocycle,

$-OR^{16}$ or $-OCOR^{17}$

wherein R^{16} and R^{17} are each a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl or heterocycle, and

R^4 is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl, heterocycle, $-COR^{18}$

wherein R^{18} is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, arylalkenyl, heteroaryl, heteroarylalkyl or heterocycle,

$-CONR^{19}R^{20}$

wherein R^{19} and R^{20} are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl, or R^{19} and R^{20} are optionally bonded to each other to form heterocycle having at least one nitrogen atom, and optionally having other further hetero atom(s),

wherein the heterocycle is optionally substituted or condensed with an aromatic ring optionally having substituent(s), or

$-SO_2R^{21}$

wherein R^{21} is alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl or heterocycle,

wherein, of the above-mentioned groups, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl and heterocycle optionally have substituent(s).

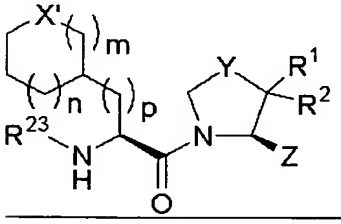
6. (Original) The compound of claim 5, wherein, in the formula (III), X′= C=O.

7. (Currently Amended) A pharmaceutical composition comprising an α-amino acid derivative of ~~any of claims 1 to 4~~ claim 1 or a pharmaceutically acceptable salt thereof and a pharmacologically acceptable carrier.

8.-10. (Canceled)

11. (Currently Amended) ~~The~~ A method of producing a compound of claim 5 wherein X′ is represented by CH-R^3, which comprises use of a compound ~~of the claim 6~~ of formula (III) in which X′ is C=O as an intermediate.

12. (Currently Amended) ~~The~~ A method of producing a compound of ~~any of the claims 1 to 4~~ claim 1, which comprises ~~the production~~ a method of ~~claim 11~~ producing a compound of formula (III)



(III)

wherein

X′ is CH-R^3,

R^{23} is $-COR^{24}$

wherein R^{24} is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl or heterocycle, or

$-COOR^{25}$

wherein R^{25} is alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl or heterocycle,

R^1 is a hydrogen atom, a halogen atom, alkyl or alkoxy,

R^2 is a hydrogen atom, a halogen atom, a hydroxyl group, alkyl or alkoxy, or

R^1 and R^2 are joined to form oxo, hydroxyimino, alkoxyimino or alkylidene,

Y is CR^5R^6

wherein R^5 and R^6 are each a hydrogen atom, a halogen atom, a hydroxyl group, alkyl or alkoxy, or R^5 and R^6 are optionally joined to form oxo, hydroxyimino, alkoxyimino or alkylidene,

S, S=O or SO_2,

Z is a hydrogen atom or cyano,

m and n are each 0, 1 or 2, wherein the sum of m and n is 1, 2 or 3,

p is 0, 1, 2 or 3,

R^3 is $-NR^7R^8$

wherein R^7 and R^8 are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl, or are optionally bonded to each other to form heterocycle having at least one nitrogen atom, and optionally having other further hetero atom(s),

wherein the heterocycle is optionally substituted or condensed with an aromatic ring optionally having substituent(s),

$-NR^9COR^{10}$

wherein R^9 and R^{10} are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, arylalkenyl, heteroaryl, heteroarylalkyl or heterocycle,

$-NR^{11}CONR^{12}R^{13}$

wherein R^{11}, R^{12} and R^{13} are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl, or R^{12} and R^{13} are optionally bonded

to each other to form heterocycle having at least one nitrogen atom, and optionally having other further hetero atom(s),

wherein the heterocycle is optionally substituted or condensed with an aromatic ring optionally having substituent(s),

$-NR^{14}SO_2R^{15}$

wherein R^{14} and R^{15} are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl or heterocycle,

$-OR^{16}$ or $-OCOR^{17}$

wherein R^{16} and R^{17} are each a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl or heterocycle, and

R^4 is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl, heterocycle, $-COR^{18}$

wherein R^{18} is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, arylalkenyl, heteroaryl, heteroarylalkyl or heterocycle,

$-CONR^{19}R^{20}$

wherein R^{19} and R^{20} are optionally the same or different and each independently is a hydrogen atom, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl, or R^{19} and R^{20} are optionally bonded to each other to form heterocycle having at least one nitrogen atom, and optionally having other further hetero atom(s),

wherein the heterocycle is optionally substituted or condensed with an aromatic ring optionally having substituent(s), or

$-SO_2R^{21}$

wherein R^{21} is alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl or heterocycle,

wherein, of the above-mentioned groups, alkyl, cycloalkyl, cycloalkylalkyl, aryl, arylalkyl, heteroaryl, heteroarylalkyl and heterocycle optionally have substituent(s)

comprising use of a compound of formula (III) in which X′ is C=O as an intermediate.

13. (New) A method of prophylactically or therapeutically treating a GLP-1-related disease comprising administering an effective amount of a compound of claim 1.

14. (New) The method of claim 13, wherein the GLP-1-related disease is therapeutically treated.

15. (New) The method of claim 13, wherein the GLP-1-related disease is diabetes or obesity.

16. (New) The method of claim 15, wherein the GLP-1-related disease is therapeutically treated.